

Linzer biol. Beitr.	45/2	2121-2126	20.12.2013
---------------------	------	-----------	------------

A study on Coccinellidae (Coleoptera: Cucujoidea) from Varamin and vicinity, Iran

N. SAMIN & M. SHOJAI

A b s t r a c t : The fauna of Coccinellidae (Coleoptera) from Varamin and vicinity (Tehran province) is studied in this paper. In total 11 species from the subfamilies Chilocorinae, Coccinellinae and Scymninae were collected and identified.

K e y w o r d s : Coleoptera, Cucujoidea: Coccinellidae, Ladybirds, Varamin, Iran.

Introduction

Coccinellidae (Coleoptera) are a large family with about 6,000 species described worldwide (VANDENBERG 2002, KOVÁŘ 2007). Most species of this family are beneficial insects because they are predators of several agricultural pests (GORDON 1985; DIXON 2000). They can have efficient role in biological control in agricultural and forest ecosystems, which if they are conserved, they can decrease the population density of pests successfully (OBRYCKI & KRING 1998; MAJERUS 1994; MAJERUS & KERANS 1989). The fauna of Iranian Coccinellidae was studied rather well (FATEMI 1983; YAZDANI 1990; SADEGHI 1991; MOSSADEGH & KOCHEILI 1993; HAJI ZADE 1995; MODARRES AWAL 1997; MAFI 1997; YAGHMAEE & KHARAZI-PAKDEL 1998; HAJI ZADE et al. 2001; JAFARI & KAMALI 2007; ESFANDIARI et al. 2008; GHAHARI & TABARI 2008; FARAHI & SADEGHI NAMGHI 2009; GHAHARI et al. 2009; ANSARI POUR 2010; JAFARI et al. 2011; ANSARI POUR & SHAKARAMI 2011), but Iran is a large country with various climates; therefore the fauna of Iranian Coccinellidae is more diverse than what have been reported so far. The goal of this paper is faunistic study on the Coccinellidae from Varamin and vicinity.

Materials and Methods

The specimens of this research were collected by sweeping net and aspirator from Varamin and vicinity (including, Ali-Abad, Asgar-Abad, Bagher-Abad, Ghaleh-Khajeh, Gharchak, Haji-Abad, Javad-Abad, Pishva, Sharif-Abad, Taghi-Abad). The materials were identified by using of some identification keys and also were compared with the determined materials by the authorized specialists. The specimens are preserved in the collection of the author. Classification, nomenclature and distribution suggested by MAJERUS (1994) and CANEPARI (2011) have been followed.

Species list

Totally 11 species of Coccinellidae from the genera *Adalia*, *Chilocorus*, *Coccinella*, *Exochomus*, *Hippodamia*, *Oenopia*, *Scymnus* and *Stethorus* were collected and identified from Varamin and vicinity.

Subfamily C h i l o c o r i n a e

Tribe C h i l o c o r i n i

Genus *Chilocorus* LEACH

Chilocorus bipustulatus (LINNEAUS 1758)

M a t e r i a l e x a m i n e d : Ghaleh-Khajeh, (2), May 2010. Varamin, (2), June 2011.

D i s t r i b u t i o n : All of Europe (except northern parts), Mediterranean Region, Palaearctic Asia and U.S.A.

Genus *Exochomus* REDTENBACHER

Exochomus nigripennis (ERICHSON 1843)

M a t e r i a l e x a m i n e d : Asgar-Abad, (4), April 2010.

D i s t r i b u t i o n : Palaearctic, Africa, India, Pakistan.

Exochomus pubescens (KUSTER 1848)

M a t e r i a l e x a m i n e d : Ghaleh-Khajeh, (2), June 2010. Taghi-Abad, (1), July 2010.

D i s t r i b u t i o n : India, Pakistan, Spain, North Africa, Greece, Egypt, Syria, Palestine.

Subfamily C o c c i n e l l i n a e

Tribe C o c c i n i l l i n i

Genus *Coccinella* (LINNEAUS)

Coccinella septempunctata LINNEAUS 1758

M a t e r i a l e x a m i n e d : Ali-Abad, (1), May 2010. Javad-Abad, (5), May 2010. Asgar-Abad, (4), April 2010. Ghaleh-Khajeh, (2), June 2010. Gharchak, (10), June 2010. Pishva, (7), June 2010. Haji-Abad, (3), July 2010. Taghi-Abad, (4), July 2010. Varamin, (6), September 2010. Varamin, (5), June 2011.

D i s t r i b u t i o n : Palaearctic Region (China and Japan included), India, Bangladesh, imported in the U.S.A.

Coccinella undecimpunctata LINNEAUS 1758

M a t e r i a l e x a m i n e d : Javad-Abad, (3), July 2010.

D i s t r i b u t i o n : Europe, Island (Sicily), in the Middle East, North Africa, Arabia, Iran, Iraq, Afghanistan and central Asia.

Genus *Adalia* (MULSANT)

***Adalia bipunctata* (LINNAEUS 1758)**

M a t e r i a l e x a m i n e d : Gharchak, (3), May 2010. Pishva, (2), June 2010.

D i s t r i b u t i o n : Holarctic Region (Azores Islands and North Africa included), Asia and Chile (Tierra del Fuego).

Genus *Hippodamia* DEJEAN

***Hippodamia (Adonia) variegata* (GOEZE 1777)**

M a t e r i a l e x a m i n e d : Haji-Abad, (4), September 2010. Gharchak, (2), April 2011.

D i s t r i b u t i o n : Palaearctic Region, eastern and southern Africa.

Genus *Oenopia* MULSANT

***Oenopia conglobata* LINNEAUS 1758**

M a t e r i a l e x a m i n e d : Bagher-Abad, (1), August 2010. Pishva, (2), April 2011.

D i s t r i b u t i o n : Europe and Asia.

Subfamily S c y m n i n a e

Tribe S t e t h o r i n i

Genus *Stethorus* WEISE

***Stethorus gilvifrons* (MULSANT 1850)**

M a t e r i a l e x a m i n e d : Taghi-Abad, (2), August 2010.

D i s t r i b u t i o n : Mediterranean Region, Middle East, Saudi Arabia, Pakistan, Kashmir, India and Oriental Region.

Tribe S c y m n i n i

Genus *Scymnus* KUGELANN

***Scymnus syriacus* MARSEUL 1868**

M a t e r i a l e x a m i n e d : Sharif-Abad, (3), June 2010.

D i s t r i b u t i o n : Eastern Mediterranean region especially Jordan, Lebanon, Turkey, Iran, Libya, Yemen and Egypt.

***Scymnus flavicollis* REDTENBACHER 1843**

M a t e r i a l e x a m i n e d : Gharchak, (4), May 2010.

D i s t r i b u t i o n : Holarctic Region.

Discussion

The fauna of Iranian Coccinellidae was studied rather well (see references), and although there is not any impressive list on this family, but nearly 150 species have been recorded from Iran so far (GHAHARI 2012). However this short paper can be useful for determining the distribution of Iranian Coccinellidae and completing the distribution map. Coccinellids are the most important and powerful predators of hemipteran pests including, aphids, mealybugs, scale insects and whiteflies (OBRYCKI & KRING 1998; RAIMUNDO et al. 2008) which are destructive agricultural pests in Iran (BEHDAD 1991; KHANJANI 2004, 2006). Unfortunately a large amount of various pesticides are used for control of the mentioned pests in Iran, while almost pesticides have lethal effect on natural enemies such as coccinellids. Therefore, farmers must be trained for conservation of natural enemies and supporting of beneficial insects.

Acknowledgements

This research was supported by the Islamic Azad University (Young Researchers Club and Elites, Tehran Science and Research Branch). The authors thank to Dr. H. Fürsch and Dr. H. Ghahari for providing the necessary papers and help for identification.

Zusammenfassung

Vorliegende Arbeit behandelt die Coccinelliden-Fauna (Coleoptera, Coccinellidae) von Varamin und Umgebung in der iranischen Provinz Teheran. 11 Arten der Unterfamilien Chilocorinae, Coccinellinae und Scymninae konnten gesammelt und bestimmt werden.

References

- ANSARI POUR A. (2010): Study of Ladybird fauna (Col.: Coccinellidae) in khorramabad district and population dynamic of dominant species. — M.Sc. thesis, Islamic Azad University, Arak. Iran.
- ANSARI POUR A. & J. SHAKARAMI (2011): Study of ladybirds (Col: Coccinellidae) in Khorramabad district and the first report of *Hyperaspis quadrimaculata* (REDTENBACHER 1844) for Iranian fauna. — Life Science Journal **8** (3): 488-495.
- BEHDAD E. (1991): Pests of fruit crops in Iran. — Isfahan Neshat, 882 pp. [in Persian].
- CANEPAI C. (2011): Contribution to the knowledge of the Coccinellidae of Sardinia (Coleoptera). — Conservazione Habitat Invertebrati **5**: 501-516.
- DIXON A.F.G. (2000): Insect predator-prey dynamics: Ladybird beetles and biological control. — New York: Cambridge University Press, 257 pp.
- ESFANDIARI H., RADJABI Gh.R., SHOJAEI M., BAGHERI M.R. & H. BARARI (2008): Faunistic study on Coccinellidae in almond orchards of Shahre-kord region and its periodic predation of in natural populations of *Sphaerolecanium prunastri*. — Journal of Agricultural Science, Islamic Azad University **13** (1): 65-76.
- FARAH S. & H. SADEGHI NAMGHI (2009): Species diversity of aphids and ladybird Mashhad district (Khorasan razavi province). — Journal of Plant Protection **23**(2): 89-95.

- FATEMI H. (1983): The fauna of Coccinellidae in Esfahan. — *Journal of Applied Entomology and Phytopathology* **50**: 21-25.
- GHAHARI H. & M. TABARI (2008): Predator beetles (Coleoptera) and their population fluctuation in rice fields of Mazandaran. — *Journal of Agriculture* **10** (2): 147-159 [in Persian, English summary].
- GHAHARI H., JEDRYCZKOWSKY W.B., ASLAN M. & H. OSTOVAN (2009): Lady beetles (Coleoptera: Coccinellidae) of Iranian cotton fields and surrounding Grasslands. — *Journal of Biological Control* **23** (3): 265-269.
- GHAHARI H. (2012): A study on the Coccinellidae (Coleoptera) from some regions of Northern Iran. — *Journal of Biological Control* **26** (1): 11-13.
- GORDON R.D. (1985): The Coccinellidae (Coleoptera) of America north of Mexico. — *Journal of the New York Entomological Society* **83**: 1-912.
- HAJI ZADE J. (1995): A survey for identification of Coccinellid species of Stethorus Weise particular reference on biology, efficiency and mass rearing possibilities of *S. golvifrons* (Mulsant) in Tehran province. — M.S.c thesis, Tarbiat Modares University, Tehran, 196 pp.
- HAJI ZADE J., JALALI SANADI J. & H. PEYROVI CHASHNASAR (2001): Introduction part of ladybirds (Col.: Coccinellidae) in Guilan province. — *Agricultural Science and Natural Resources* **4**: 99-112.
- JAFARI R. & K. KAMALI (2007): Faunistic study of ladybird (Col.: Coccinellidae) in Lorestan province and report of new records in Iran. — *New Findings in Agriculture* **4**: 349-359.
- JAFARI R., ZAREI JALLALABAD N. & R. VAFAEI SHOUSHARI (2011): The faunistic survey on Coccinellids in Zarand Zone. — *Journal of Entomological Research* **3** (4): 277-284.
- KHANJANI M. (2004): Field crop pests in Iran. — Bu-Ali Sina University, 719 pp. [in Persian].
- KHANJANI M. (2006): Vegetable pests in Iran. — Bu-Ali Sina University, No. 205. 467 pp. [in Persian].
- KOVÁR I. (2007): Coccinellidae, pp. 71–74; 568–630. — In: LOBL I. & A. SMETANA (eds), *Catalogue of Palaearctic Coleoptera*. Volume 4. Elateroidea – Derodontoidea – Bostrichoidea – Lymexyloidea – Cleroidea – Cucujoidea. Apollo Books, Stentrup.
- MAFI SH. (1997): Identification of mealybug species (Pseudococcidae) in Mazandaran province and study on dominant species and its natural enemies. — M.S. thesis, Tarbiat Modares University, Tehran, 112 pp.
- MAJERUS M.E.N. (1994): Ladybirds. — London: Harper Collins, 367 pp.
- MAJERUS M.E.N. & P. KERANS (1989): Ladybirds. — Richmond Publishing Co. Ltd. 103 pp.
- MODARRES AWAL M. (1997): List of agricultural pests and their natural enemies in Iran. — Ferdowsi University Press, 429 pp.
- MOSSADEGH M.S. & F. KOCHILI (1993): Some of the ladybirds (Coccinellidae) fauna of Khuzestan, southwest, Iran. — *Scientific Journal of Agriculture, Shahid Chamran University* **16** (1-2): 23-30.
- OBRYCKI J.J. & T.J. KRING (1998): Predaceous Coccinellidae in biological control. — *Annual Review of Entomology* **43**: 295-321.
- RAIMUNDO A.C., FÜRSCH H. & A. VAN HARTEN (2008): Order Coleoptera, family Coccinellidae. — In: van Harten A. (ed.), *Arthropod fauna of the UAE*. Dar Al Ummah Printing, Abu Dhabi, UAE **1**: 217-239.
- SADEGHI I. (1991): An investigation on the Coccinellidae fauna of alfalfa fields and determination of dominant species at Karaj. — M.S. thesis, Tarbiat modares university, Tehran, 284 pp.

- VANDENBERG N.J. (2002): 93. Coccinellidae Latreille 1807: 371-389. — In: ARNETT R.H. jr., THOMAS M.C., SKELLY P.E. & J.H. FRANK (eds), American beetles 2, Polyphaga: Scarabaeoidea through Curculionoidea. CRC Press, Boca Raton, London, New York, Washington.
- YAGHMAEE F. & A. KHARAZI-PAKDEL (1998): Taxonomic study of the subfamily Scymninae (Coleoptera: Coccinellidae) in Mashhad region. — Journal of Entomological Society of Iran **16 & 17**: 41-56.
- YAZDANI A. (1990): The coccinellids (Col.; Coccinellidae) fauna of Fars province. — M.Sc. Thesis, Shiraz University, 145 pp.

Authors' addresses:

Najmeh SAMIN
Young Researchers Club and Elites
Science and Research Branch
Islamic Azad University
Tehran, Iran
E-mail: n_samin63@yahoo.com

Mahmood SHOJAI
Department of Entomology
Science and Research Branch
Islamic Azad University
Tehran, Iran